

We claim:

- 1 1. A processor comprising:
2 a plurality of functional units including a first functional unit and a second
3 functional unit, the first functional unit to receive instructions, to
4 determine whether ones of the instructions are associated with a
5 virus, and to transmit the ones of the instructions not associated with
6 the virus to the second functional unit.
- 1 2. The processor of claim 1, wherein the first functional unit is a virus detection
2 unit, and wherein the second functional unit is a fetch and decode unit.
- 1 3. The processor of claim 1, wherein the first functional unit includes,
2 a virus information unit to store virus information; and
3 a virus detection engine to compare each of the instructions to the virus information.
- 1 4. The processor of claim 3, wherein the virus detection unit includes an
2 authentication unit to authenticate a source of the virus information.
- 1 5. The processor of claim 1, wherein the first functional unit includes a virus
2 information unit, the virus information unit to store a state machine that is to
3 determine whether ones of the instructions are associated with a virus.
- 1 6. The processor of claim 1, wherein the first functional unit is a virus detection
2 unit and wherein the second functional unit is a dispatch and execution unit.
- 1 7. A apparatus comprising:
2 an instruction cache to store instructions;

3 a virus detection unit to receive the instructions from the instruction cache,
4 the virus detection unit to determine whether ones of the instructions
5 are associated with a virus; and
6 a dispatch and execution unit to receive from the virus detection unit the ones of the
7 instructions that are not associated with the virus.

1 8. The apparatus of claim 7, wherein the virus detection unit includes a virus
2 information unit to store virus signatures, the virus detection unit to compare each of
3 the instructions to the virus signatures.

1 9. The apparatus of claim 8, wherein the virus detection unit includes an
2 authentication unit to authenticate a source of the virus signatures.

1 10. The apparatus of claim 7, wherein the virus detection unit includes a virus
2 information unit to store state information, the virus detection unit to input each of
3 the instructions into a state machine.

1 11. A method comprising:
2 receiving an instruction in a first functional unit of a processor pipeline;
3 determining whether the instruction is associated with a virus; and
4 after determining the instruction is not associated with a virus, transmitting the
5 instruction to a second functional unit of the processor pipeline for further
6 processing.

1 12. The method of claim 11, wherein the determining whether the instruction is
2 associated with a virus includes, comparing the instruction to virus signatures stored
3 in the first functional unit.

1 13. The method of claim 11, wherein the determining whether the instruction is
2 associated with a virus includes inputting the instruction into a state machine stored
3 in the first functional unit.

1 14. The method of claim 11 wherein the virus is a polymorphic virus.

1 15. The method 11, wherein the first functional unit is a virus detection unit, and
2 wherein the second functional unit is a fetch and decode unit.

1 16. The method of claim 11, further comprising:
2 after determining the instruction is associated with a virus, removing the instruction
3 from the processor pipeline.

1 17. The method of claim 11, wherein the instruction has been partially processed by
2 a set of one or more functional units of the processor pipeline.

1 18. A processor comprising:
2 an instruction cache to store instructions;
3 a virus detection unit to receive the instructions from the instruction cache,
4 the virus detection unit to transmit ones of the instructions that are
5 not associated with a virus, the virus detection unit including,
6 a virus information unit to store virus signatures and state machine
7 information;
8 an authentication unit to authenticate the source of the virus
9 signatures and the state machine information; and
10 a virus detection engine to compare certain of the instructions to the
11 virus signatures, and to input certain of the instructions into a
12 state machine configured according to the state machine
13 information;

14 a fetch and decode unit to receive ones of the instructions from the virus
15 detection unit; and
16 a set of one or more execution units to receive ones of the instructions from the
17 fetch and decode unit and to execute the ones of the instructions.

1 19. The processor of claim 18, wherein the virus detection engine determines
2 whether ones of the instructions are associated with the virus.

1 20. The processor of claim 18, wherein the virus is a polymorphic virus.

1 21. A system comprising:
2 a synchronous dynamic random access memory (SDRAM) unit;
3 a processor coupled to the SDRAM unit, the processor including,
4 a plurality of functional units including a first functional unit and a second
5 functional unit, the first functional unit to receive instructions, to determine whether
6 ones of the instructions are associated with a virus, and to transmit the ones of the
7 instructions not associated with the virus to the second functional unit.

1 22. The system of claim 21, wherein the first functional unit is a virus detection
2 unit, and wherein the second functional unit is a fetch and decode unit.

1 23. The system of claim 21, wherein the first functional unit is a virus detection
2 unit and wherein the second functional unit is a dispatch and execution unit.

1 24. The system of claim 21, wherein the first functional unit includes,
2 a virus information unit to store virus information; and
3 a virus detection engine to compare each of the instructions to the virus information
4 stored in the processor.

1 25. The system of claim 21, wherein the virus detection unit includes an
2 authentication unit to authenticate a source of the virus information.

1 26. The system of claim 21, wherein the first functional unit includes a virus
2 information unit, the virus information unit to store a state machine for determining
3 whether ones of the instructions are associated with a virus.